VIRGINIA WILDLIFE

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Photo by Jim Lee

November — Sunrise

VIRGINIA WILDLIFE

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A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and Related Natural Resources, and to the Betterment of Hunting and Fishing in Virginia

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Cover

The black bear—a popular, native, big-game animal in Virginia. Found almost entirely in the rugged mountain areas and the Dismal Swamp semi-wilderness.

Commission Photo by Kesteloo

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Photo by John C. Wood

Most insect pests of the forests can be controlled by a one-pound-per-acre application of DDT applied from an airplane once every several years.

Chemical Controls in Relation to Wildlife*

DR. CLARENCE COTTAM,
Director
Rob and Bessie Welder Wildlife Foundation

(PART TWO)

Mosquito Control and Wildlife

Due to the sensitivity of aquatic life to insecticidal poisoning, the development of safe programs for control of mosquitoes in marshland is still not completely solved. Here chemicals must of necessity be applied directly to mosquito breeding areas to kill the larvae. The problem is of particular importance in coastal areas where fishes, crabs, and shrimps are involved. Cases of extensive kills have been reported in New Jersey and Virginia. Not only do these animals have a high commercial value, but they also serve as food for many kinds of marsh birds. For example, fiddler crabs and their relatives comprise 60 to 90 per cent of the summer food of the clapper rail in mid-Atlantic states. A further complication to the control problem is introduced by the development in many areas of mosquitoes resistant to DDT and related insecticides. This has forced control workers to employ heavier doses at more frequent intervals or to turn to more toxic pesticides presenting unknown hazards to wildlife.

In some areas, ditching is again being advocated for mosquito control. This practice has often proved to be extremely detrimental to the wildlife of marshlands by lowering the water level in marshes and ponds and causing deleterious changes in vegetation. During the past three years, the Fish and Wildlife Service has engaged in cooperative studies in Delaware and New Jersey with several federal and state mosquito abatement and wildlife agencies to develop methods more compatible with wildlife management interests. An environmental type of control based on impoundment of water rather than drainage and incorporating suggestions for water level manipulation and vegetation control appears very promising for many situations. Certain other methods of water level management favor both mosquito control and wildlife management.[15]

Forest Insect Control

Most insect pests of forests can be controlled by a one-pound-per-acre application of DDT applied from an airplane once every several years. Only one-quarter or less of the DDT applied passes through the leafy canopies and reaches the surface ground. Terrestrial insects suffer heavy losses, but residual effects of the insecticide last only about a week. Aquatic insects are particularly susceptible, probably by reason of the intimate and continuous contact with the poison provided by pond and stream

habitats. Repopulation in streams generally requires a year, although certain very sensitive organisms may take longer periods. Generally, these applications cause the death of only a few fish. Recently, however, severe losses of young salmon occurred in New Brunswick following a treatment of one-half pound of DDT per acre and the delayed death of many trout, mountain whitefish, and suckers in Montana was blamed on a reduction of food supply caused by an application of one pound of DDT per acre.

There is also the danger that wind and wave action may cause concentrations several times greater than the dosage applied. A case of this kind occurred several years ago in Yosemite National Park, California, in connection with aerial spraying for lodgepole pine needleminer where DDT in oil emulsion was sprayed at a rate of one pound per acre. A 150-acre lake located within the treated plot was sprayed along a small portion of the east and southeast fringe only. However, winds caused deposits and the DDT washed in by tributary streams accumulated on the east shore at a concentration of about two pounds per acre where it caused the death of a number of trout and suckers.

Herbicides

The development of new herbicides, including 2,4-D; 2,4,5-T; TCA; and ammonium sulfamate, has been almost as spectacular as that of insecticides. Over 85 million pounds of these chemicals are used annually. Most of these plant poisons appear to present little toxicological hazards to animal life at recommended dosage levels, but their indirect effects on wildlife habitat may be serious in some places. Conversely, when properly utilized, they are an important aid to wildlife management.

In many situations herbicides can be helpful in improving food and cover conditions for wildlife. In thick, brushy growth they may be used to form clearings in which vegetation is set back to the herb and grass stage. Forests, agricultural fields, pastures, or range lands, with a mixture of cover types, usually produce more game or other wildlife than do solid stands of a single type. Through selective spraying, it is possible to eliminate species of brush that are inferior for wildlife so that useful plants such as fruit-bearing shrubs can then spread and take their place. Unproductive marshes likewise can be improved to produce openings for waterfowl by sprayings which kill or greatly retard cattails, giant cutgrass, maidencane, needlerush, water-hyacinth, waterlettuce, lotus, waterlilies, spatterdocks, rose mallow, and other pest plants. Herbicidal control of excess aquatic plants in ponds and lakes also improves fishing by permitting predation of surplus small fish and increased growth of large ones. The Southeast, more than any other section of the country, can benefit from the wise use of herbicides in wetland areas because of the variety and abundance of troublesome marsh and aquatic weeds that occur there.

Nevertheless, weed killers may sometimes harm wildlife by destroying or adversely modifying valuable habitat. The problem is most likely to be acute in highly agricultural areas where cover is at a premium. Whenever possible, shrubby growth should be left along roadsides, fence-rows, and ditch-banks. Studies indicate that hedgerows not only serve as windbreaks, but also harbor fewer harmful rodents and pest insects than grassy borders.

Herbicides may also have a repellent effect. Work in Pennsylvania has shown a definite reluctance on the part of cottontails to eat plants sprayed with the ester formulation of 2,4,5-T and 2,4-D. In aquatic areas, care must be taken to prevent depletion of dissolved oxygen caused by excess accumulation and decay of dead plants resulting from weed control operations.

For a while, ammate (ammonium sulfamate) was suspected of causing the die-off in the deer herd of a National Forest in Alabama during 1949. However, tests conducted by the Alabama Cooperative Wildlife Research Unit showed that ammate did not endanger deer, either directly or indirectly.

Concentrations of 2,4-D, generally used for weed control, are relatively non-toxic to most soil microorganisms. However, TCA has been found to cause significant reduction in their activity, and also acts as a temporary soil sterilant preventing new plant growth. Ammate, on the contrary, is beneficial to the soil as a fertilizer. The full biological effects of some new and powerful herbicides have not yet been determined, and only limited knowledge now exists on most other new plant control agents.

Copper sulfate, a "scum" killer, while relatively safe in controlling algal "bloom" when used with skill and understanding, can be highly damaging to aquatic resources if used in excess. Considerable loss of fish has sometimes occurred when dichlorobenzene and trichlorobenzene have been used in aquatic weed control.

Conclusions

About one and a half million tons of chemical pest control agents are used annually in the United States. The considerable injury they cause wildlife resources

New herbicides may have a repellent effect on wildlife. Work in some states has shown a definite reluctance on the part of cottontails to eat plants sprayed with 2,4,5-T and 2,4-D.

could be reduced to a great extent if more public support and funds were devoted to research on the subject. In particular, research is needed to help develop more selective and appropriate pesticides, formulations, dosages, and safe methods of application. At stake are wildlife resources on which some 30 to 40 million hunters and fishermen spend at least 8 billion dollars annually. The aesthetic worth of wildlife probably is of still greater value to America, and certainly is worth protecting from avoidable harm.

The new insecticides are mainly chlorinated hydrocarbons or organic phosphates, and most of them are both internal and external poisons. DDT was the first of the new controls to be developed, and it still has the widest use. The effects of these controls on mammals, birds, and cold-blooded vertebrates vary markedly with the different species concerned, and with formulation, dosage, period of feeding or exposure, mode of entry into the body, and environmental conditions occurring at the time of application. Damage to wildlife is largely the result of over-dosage, improper formulation, or too frequent application. Biological insect control has proved effective for some pests and should be used wherever possible.

Over 85 million pounds of herbicides, mostly 2,4-D; 2,4,5-T; TCA; and ammate are used annually. With proper application, they appear to present few toxicological hazards and are valuable in wildlife management as a means of improving wildlife food and cover conditions. However, when used without care, they can cause destruction of valuable wildlife habitat.

Precautions and Recommendations

Chemical controls that are seriously damaging to wildlife should be used only after weighing the value of such control against the probable harm that will be done. Instructions on labels or directives for use should be meticulously followed. The minimum dosage and least damaging formulation that will effect control should be used. Over-dosage "for good measure" is both wasteful and unnecessarily destructive. When aerial applications are made, careful ground-to-plane controls should be provided to insure coverage of only the areas where control is intended and to prevent over-dosing.

Because of the high sensitivity of most cold-blooded creatures to many commonly used pesticides, precaution should be used, as far as practical, to avoid aerial dusting or spraying over lakes, ponds, and streams. Smaller quantities of toxicants should be used in emulsion because of increased toxicity of this formulation to many aquatic forms of life. To avoid damage to fish, crabs, and crayfishes, in mosquito control, not more than one-fifth pound of DDT per acre in an oil solution should be used. When possible, there should be avoidance of application during the spring migration and nesting period of birds. Also, in forest areas use less than two pounds per acre to avoid damage to birds, amphibians, and mammals, and avoid treatment of open water areas and marshes. In control operations over large areas, leave strips, blocks, or headwaters of streams untreated, wherever feasible, in order to protect wildlife and to facilitate repopulation.

A stepped-up research program is urgently recommended. We need to know more of the indirect as well as the direct effects of the use of specific chemical agents. Also, there needs to be wider recognition of responsibility for hazards on the part of all concerned, including industry and those who apply pesticides. More stringent laws regulating the sale and use of chemical poisons are needed in some states.

U. S. Sportsmen are Big Spenders

The results of a survey by the U. S. Fish and Wildlife Service to learn more about American sportsmen and their activities has confirmed at least one impressive finding; hunting and fishing in this country is definitely big business . . . . a multi-billion dollar business!

Hunters and fishermen last year spent nearly three billion dollars on their respective sports, hunted and fished for approximately 500 million days, and travelled over ten billion miles doing it.

Fishing led as the most popular field sport, with about 20,813,000 persons over 12 years of age avidly participating. $1,914,292 was spent, an average of $91.98 per person. Of this figure, $793,663,000 was spent on equipment and about $1,047,708,000 on food, lodging and transportation.

About 11,784,000 Americans went hunting last year, and shelled out $936,687,000 for the privilege, or an average of $79.49 per person. About $124,388,000 was spent on hunting dogs alone.

These statistics were gathered from a poll of 20,000 American households by the Crossley, S-D Surveys, Inc., who conducted the survey for the Fish and Wildlife Service.

Commission Photo by Kesteloo

More and more teachers in the entire field of education are stressing the importance of soil, water, forest, wildlife and other basic resources. As the teaching reaches the next generation, this effort will show results.

An Educator Evaluates Conservation

By DR. R. E. TRIPPENSEE*

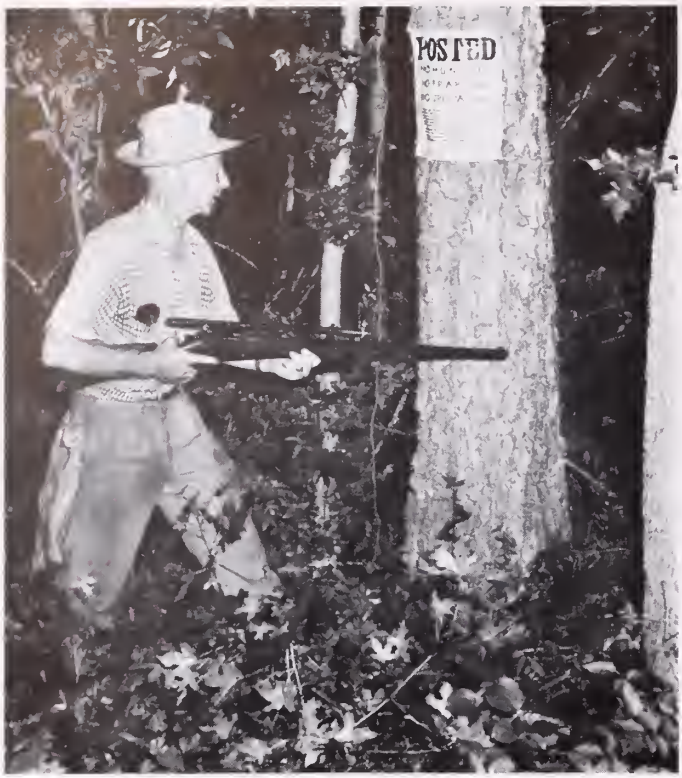
BEFORE the end of 1956, more than 35 million fishermen and hunters will whip the streams and tramp the woods and fields in pursuit of fish, game and health. Several hundred million or perhaps even a billion dollars will be spent on guns, ammunition, tackle and other accessories for making the sport pleasurable and productive. Part of this horde will come home tired and disgruntled, but most of them will feel well paid for their efforts from a trip to the open spaces. Not all of them will be repaid with fish and fowl, but all will have experienced the "lift" which comes from time spent in an environment of pure air and ample elbow room.

During the past half century we have changed in the United States from a country of farm owners to a land of factory operators and apartment dwellers. Even the farmers operate on a push-button basis with milking parlors, combines and other mechanized processes. With the change in location and occupation of people have come many problems. The fence and fence-row vegetation have given way to large fields and a minimum of habitat for wildlife. The hordes of hunters and fishermen have lost their respect for land ownership and have moved farther afield with the lure of distant lakes and better hunting ever in mind. With this exodus of city sportsmen have come discarded beer cans, lunch boxes, broken fences and injured feelings on the part of landowners. Following this have come the "no trespass" sign and the irate tempers of the people who produce the fish and game.

Frequently, however, there is no complete satisfaction with the closing of land against city sportsmen. The American farmer is traditionally known for his generosity and splendid attitude toward his neighbors, even city neighbors whom he does not know well. Generally, he would prefer to allow the use of his land by sportsmen if that privilege were respected, so the closing sign is not always a final action. Where decent sportsmen ask for the use of the land and follow rules of common courtesy, the landowner will usually take down his sign or at least allow the use of the land by special permit. This lesson in manners is being learned the hard way by millions of gun toters who need the broad acres of our farms and woodlands to keep both physical and mental equipment in healthy condition.

The matter of keeping waters clean and healthful is another problem we are solving slowly and with much groaning and discomfort. The highest and lowest in the economic scale are guilty of violating the pollution rule. One industry dumps its waste materials into a stream and costs another industry downstream thousands of dollars to remove the resulting pollution. A city allows its sewage wastes to pass into a clear, pure stream and so destroys its usefulness for the village farther down. Even Joe Public, with dinner pail and bicycle, wraps his tin cans and garbage in a newspaper and carries them to the

*Dr. Trippensee is professor of wildlife management at the University of Massachusetts, Amherst, Mass.



Where sportsmen ask for permission to hunt or fish and follow the rules of common courtesy, the landowner will usually grant permission even if the land is posted.

nearest river. All are making their own surroundings less pleasant and the future less secure.

Laws, both federal and state, are making some progress, but the greatest strides are being made through education at all levels. Great industries are now making plans to take care of their wastes, and communities are treating their pollution. Fishermen are studying the effects of streamside dumps, and state and local health departments are beginning to work on the problem. When we arrive at a time when each citizen, each company and each industry decides he has a moral obligation to take care of his own filth, we will see the streams run pure and clear and the aquatic life come back to our much abused waterways.

Many of the conditions just described are of a social nature. As yet, science has not been able to cross the barrier which decrees that fertile soil is necessary to raise abundant crops, that no substitute has been found to take the place of delicate roots, green leaves and nutritious seeds. The deer, beaver, trout, quail and antelope have not changed their exacting demands for food, cover or breeding range, and the rise and fall of populations depend on the needs of life which in turn are influenced by economic laws of people.

That some progress has been made in the field of wildlife conservation is evident if we look at the conservation picture over a broad area. The Swedes have been raising trees and moose together and harvesting a crop of both for several hundred years. In 1952 the moose harvest in Sweden was more than 22,000 animals and well over seven million pounds of meat. In our own country wild turkeys are moving northward in Pennsylvania following an advanced stage of mature hardwood trees and the accompanying mast crop. "Any deer" seasons are becoming more common in the states such as Michigan and Wisconsin where overpopulation and winter losses have been a tradition for many years. Successful muskrat management has become a fixed procedure, and success is tied in with higher, rather than lower, annual harvests. Fish management is making some progress under the federal aid program, and emphasis is changing to better use of artificially produced fish, weed and population controls, longer fishing seasons in overstocked waters and other new and revolutionary measures. Creel censuses and scale studies are indicating the degree of success of stocking and productiveness of waters in terms of hours necessary to catch a fish.

While general understanding of the resources problem is still at a low level, nevertheless it is growing. The area of greatest possibility and perhaps lowest accomplishment is in the field of education. More and more teachers of elementary school children are coming to understand the importance and mechanics of the use of soil, water, vegetation and other basic resources. As their teachings reach the schools and as the present generation reaches adulthood, this effort will begin to show results. Industries of many kinds are taking an interest in better soil management and water and forest conservation, but the process is painfully slow in terms of acre accomplishments.

The lack of trained personnel, which was evident 20 years ago, is giving way to a body of trained young people, who have both intelligence and enthusiasm for the job at hand. From this group are emerging teachers, administrators and research workers who will carry the job forward. Whether the prospects look grim or bright depends on the morale of the individual. Hardly a dent has been made in the problem, but we must remember the problem has been developing for more than 300 years and so will not be solved in a decade. While we have no cause to be complacent, certainly this is no time to generate gloom. By comparison, we are a young nation and have an abundance of resources with which to work. If we continue to appreciate the importance of each grain of soil, each drop of water and each spear of grass and to pass on this reverence to young and old alike, we are likely to solve our problems through a democratic process and to bequeath to those who follow us a world in which it is still delightful to live.

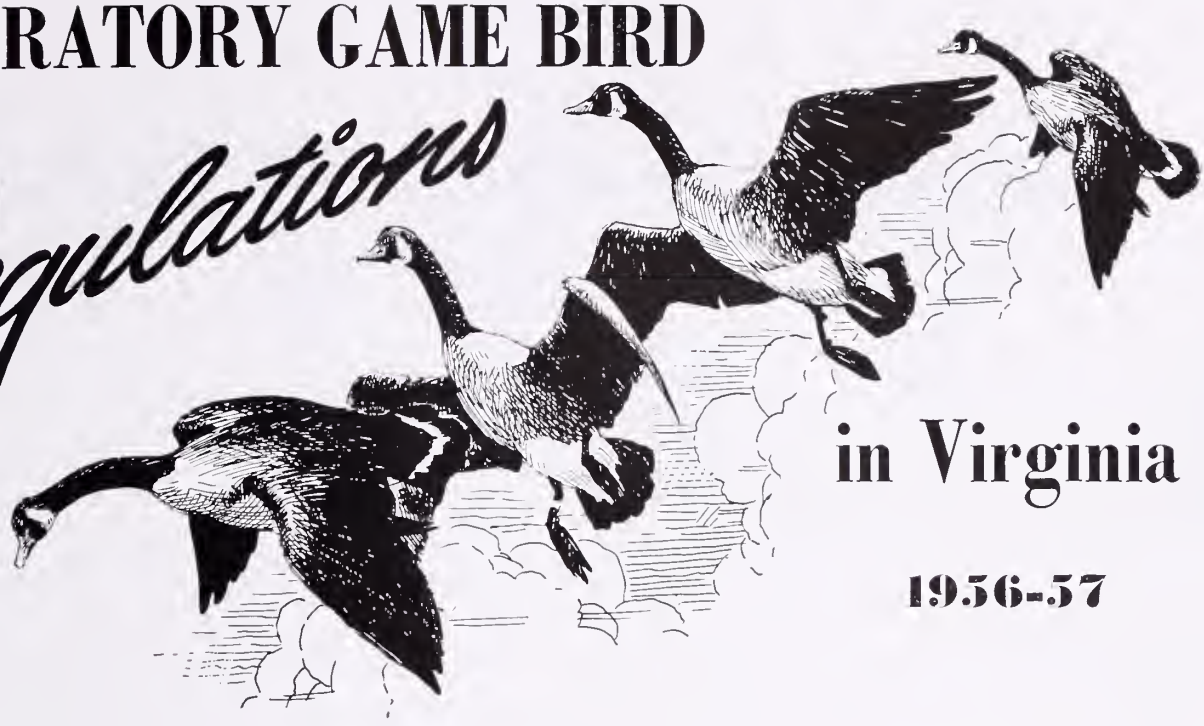
EDITOR'S NOTE

The October 1956 issue of *Virginia Wildlife* incorrectly named Paul Sanders, editor of the *Southern Planter,* as author of "Democracy at Work In My Soil Conservation District." The author credit correctly should have read: By Paul Saunders, formerly with the Soil Conservation Service.

Charles Planck informs us that a picture caption with his article on white water canoeing in the August 1956 issue of our publication should have emphasized the fact that Great Falls on the Potomac is dangerous water for any canoeist.

MIGRATORY GAME BIRD

Regulations



in Virginia

1956-57

WATERFOWL (DUCKS, GEESE, BRANT, COOTS)

Season: November 7 - January 15

Hours: From one-half hour before sunrise until sunset; except, however, at Back Bay no hunter shall be permitted to leave shore before one-half hour before sunrise, and shall not be allowed to fire his gun before sunrise, and shall not shoot later than 4 p.m.

Bag Limits: Ducks, 4 a day (1 of which may be a wood duck), 8 in possession after first day (2 of which may be wood ducks)
Geese, 2 Canada geese a day, 4 in possession after first day
Coot, 10 a day, 10 in possession
Brant, 6 a day, 6 in possession

RAILS AND GALLINULES

CLAPPER RAIL AND GALLINULES

Season: September 15 - October 31

Bag Limit: 10 a day in the aggregate of rails and gallinules, 20 in possession

Hours: From one-half hour before sunrise until sunset each day

SORA

Season: September 15 - October 31

Bag Limit: 25 a day, 25 in possession

Hours: From one-half hour before sunrise until sunset each day

DOVES

Season: September 15 - October 27
December 25 - January 5

Bag Limit: 8 a day, 8 in possession

Hours: From 12 o'clock noon until sunset each day

WOODCOCK

Season: November 19 - December 28

Bag Limit: 4 a day, 8 in possession after first day

Hours: One-half hour before sunrise to sunset each day

JACKSNIPE
(WILSON'S SNIPE)

Season: November 19 - December 18

Bag Limit: 8 a day, 8 in possession

Hours: One-half hour before sunrise to sunset each day

Know Your Waterfowl

Most gunners do not recognize many of the ducks they kill. Some do not have enough interest to find out what they may be, but other gunners would like to identify the specimens that they bag. Failure in identification may mean that many rare species as well as interesting hybrids are taken and never reported.

In Virginia it is important to be able to identify some species in order not to break the migratory game bird regulations. The Virginia Commission of Game and Inland Fisheries has a *Virginia Waterfowl Identification Guide*, published by the Atlantic Waterfowl Council, that makes the identification of all waterfowl species found in the state an easy task. This 56-page booklet is free for the asking by writing to the Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia.

VIRGINIA OAKS USEFUL TO WILDLIFE

By DAN E. CANTNER
Special Services Officer

TO WILDLIFE the oaks are an important group of food-producing forest trees. During the fall and winter months their acorns are utilized by many forms of wildlife including songbirds, game birds, waterfowl, shore birds, deer, small mammals, and fur and game animals. The importance of this group of trees to wildlife makes their identification of value to everyone interested in nature.

In the northern hemisphere there are approximately 300 species of oaks, some of which are shrubs. Virginia has about 17 important species within her boundaries.

Oaks belong to the beech family or Fagaceae. In Virginia this family includes the beech, chestnut, chinkapin and the oaks.

In classifying the various species of oaks, the genus is divided into two main groups, or subgenera — the white oaks and the red oaks. These are separated on the basis of the structure of the leaf and the ripening and structure of the acorn. Several of the white oaks are called chestnut oaks. These have a number of shallow lobes around the leaf margin. Several of the red oaks form a group called the willow oaks. The leaves of the latter are scarcely, if at all, lobed and are much longer than broad.

The following table lists the more important oaks found in Virginia and their approximate range within the state:

Scientific Name	*Range*	*Common Name*
WHITE OAK GROUP — White Oaks		
Quercus alba*	Statewide	White Oak
" lyrata	Coastal plain	Overcup Oak
" stellata*	Statewide on dry soils	Post Oak
— Chestnut Oaks		
Quercus prinus*	Coastal plain	Swamp Chestnut
" montanta*	Mountains of state	Chestnut Oak
" bicolor*	Few in north of state only	Swamp White Oak
" muehlenbergii	Mountains of state	Chinquapin
RED OAK GROUP — Red Oaks		
Quercus borealis*	Statewide	Northern Red
" velutina*	Statewide	Black Oak
" falcata*	Coastal plain	Southern Red Oak
" coccinea*	Mountains	Scarlet Oak
" palustris*	Piedmont	Pin Oak
" laevis	Southeast	Turkey Oak
" marlandica*	Statewide	Blackjack Oak
— Willow Oaks		
Quercus phellos	Coastal plain	Willow Oak
" nigra*	Coastal plain	Water Oak
" imbricaria	Mountains & Piedmont	Shingle Oak
" virginiana*	Southeast	Live Oak

* Important as wildlife food.

Of the 17 major species listed above, the book *American Wildlife and Plants* lists 13 species as being important for wildlife food. It the future, as more wildlife food habitat work is done, this number may increase.

A comprehensive key distinguishing the oak genus from other trees would be too long and involved for the purpose of this article. The short key which follows groups the important oaks according to their leaf margin and duration on the tree.

The key is made up of several couplets (A, AA, etc.) designated by capital letters. Read the first couplet (A) and see if the leaf fits the description. If so, go to the couplet indicated by a capital at the end of the sentence (B). If the leaf does not fit the first couplet (A) go to the second couplet (AA) and so on until you get the tree into a final group of oaks. Here you will find a list of figures which will help in taking the tree to the species.

A. Leaves without bristle tipped lobes; acorn matures in one season; inner surface of shell of the acorn smooth, without wooly coating; acorn sweet tasting. — White Oak Group — B

AA. Leaves mostly with bristle tipped lobes or, if unlobed, leaf tip with bristle or spine; acorn usually matures in two seasons; inner surface of shell of the acorn contains soft, wool-like hair; acorn usually bitter tasting. — Red Oak Group — C

B. Leaves commonly with deep lobes—White oak, and post oak. See figures 1 and 5.

BB. Leaves rather coarsely toothed or having shallow lobes — Swamp chestnut oak, chestnut oak and swamp white oak. See figures 2, 3, and 4.

C. Leaves evergreen or attached for 1-4 years (live oaks) See figure 6.

CC. Leaves fall first autumn or the spring following.

D. Leaf lobes nearly opposite or apex of leaf lobed and wider than base — Northern red, black oak, scarlet oak, pin oak, blackjack oak, water oak. See figures 7-12.

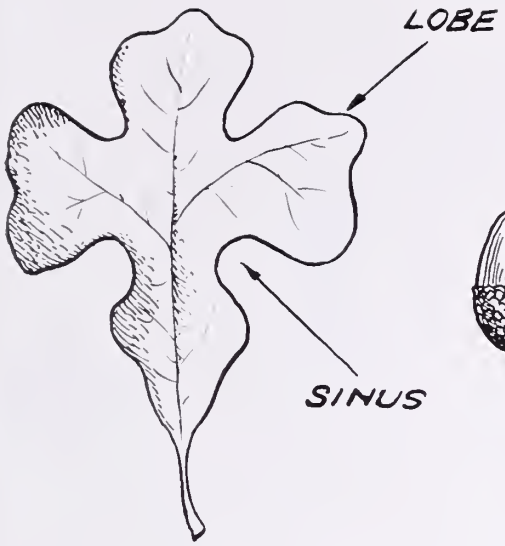


Figure 1—Post Oak
Leaf in shape of cross, covered with dense, matted, short hairs on undersurface.

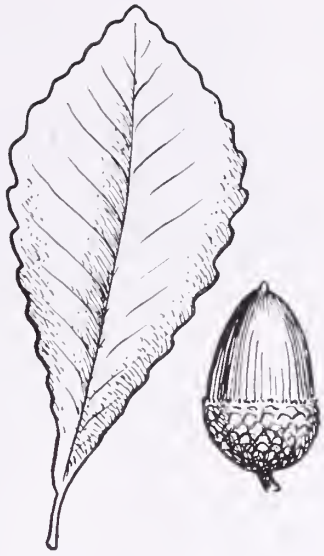


Figure 2—Swamp Chestnut Oak
Leaf egg shaped with widest portion at the top; margin of teeth varying from blunt and rounded to sharp pointed.

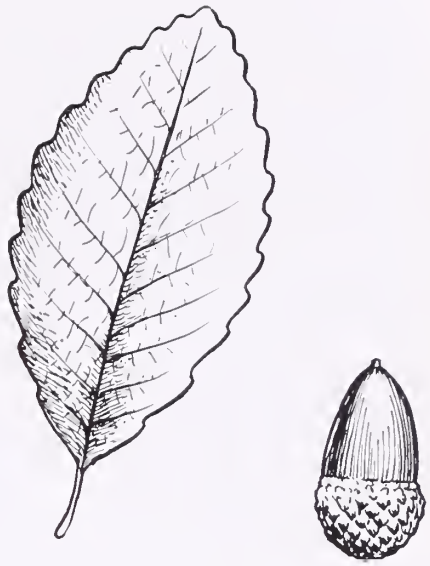


Figure 3—Chestnut Oak
Leaf widest at middle, tapering to each end; margin with rounded to blunt teeth.

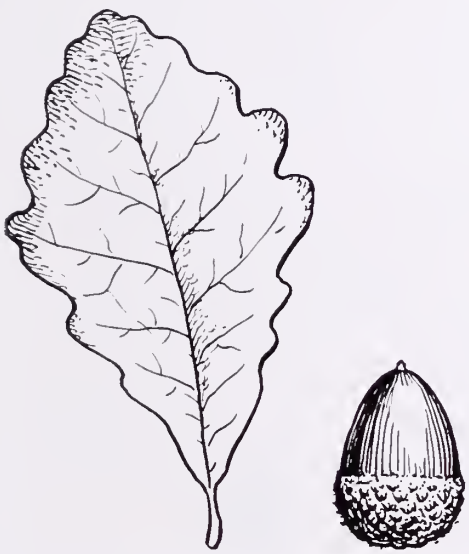


Figure 4—Swamp White Oak
Margin variable, rounded to blunt teeth or shallowly lobed.

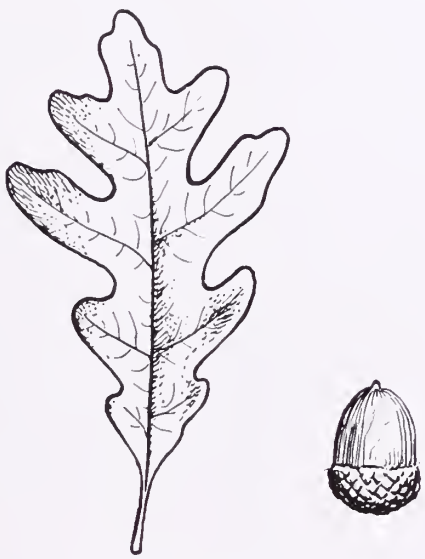


Figure 5—White Oak
Leaves deep or shallow and rather evenly lobed; sinuses rather narrow; under-surfaces without hair.

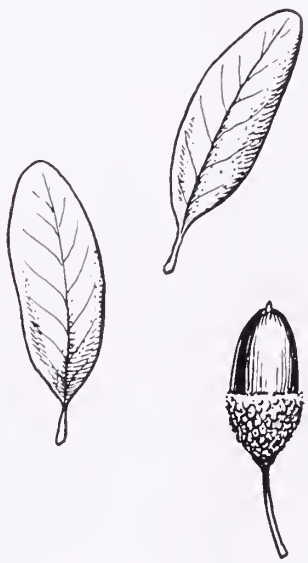


Figure 6—Live Oak
Leaves persistent; smooth margin; wide in middle, tapering to each end.

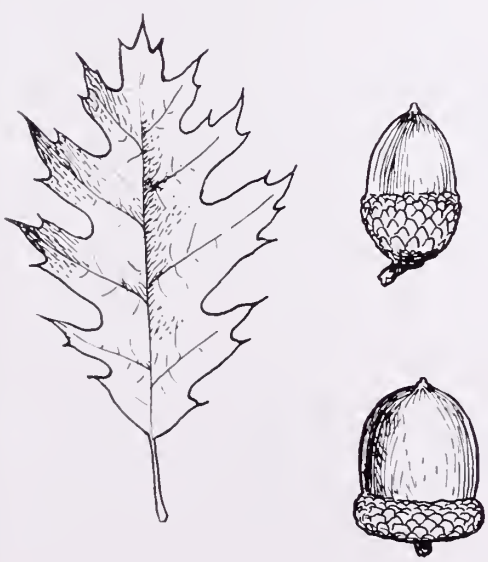


Figure 7—Northern Red Oak
7 to 11 lobes with narrow, rather regular sinuses; outline of leaf like egg, with widest part at top; smooth beneath except for minute tufts of hair on center vein.

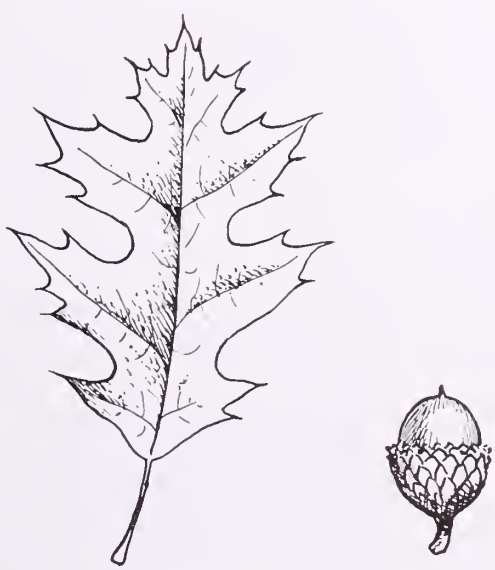


Figure 8—Black Oak
Inverted egg shaped to oval in outline; sinuses of varying depth; yellowish to copper colored beneath; hair on center vein white to reddish brown.

Figure 9—Scarlet Oak
Oval to ovate in outline, with 5-9 deep lobes; sinuses approaching circular in shape, smooth below except for hair on center vein.

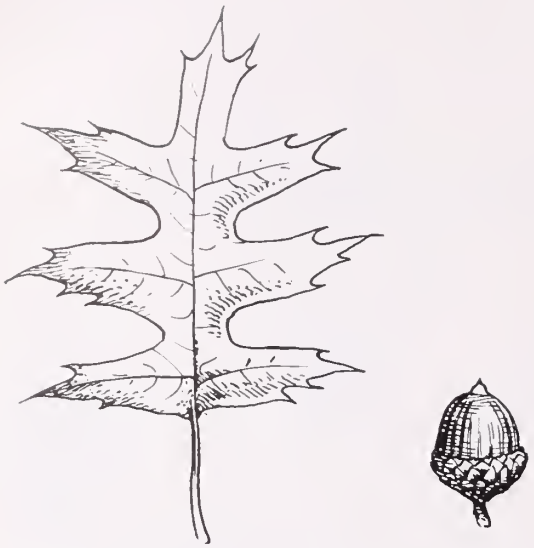


Figure 10—Pin Oak
Similar to scarlet oak, but sinuses are broadly U-shaped to squarish.

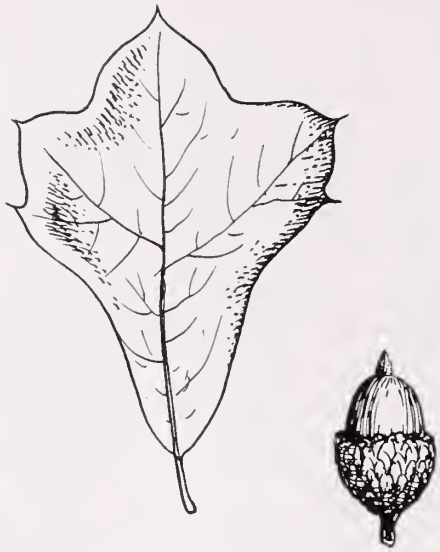


Figure 11—Blackjack Oak
Typical leaf outline, egg shaped with widest portion at top; 3 shallow lobes at tip, slightly hairy beneath.

Figure 12—Water Oak
Very variable. From spatula shaped, oblong, egg shaped, with widest portion at top to linear. 3 to 5 lobes.

DD. Leaves longer than broad with a smooth margin. Willow oak — See figure 13.

With the above key you now have the species grouped into various classes based on the nature of the leaf margin and its duration on the tree. In order to get the tree into the specific category, the figures shown, based on leaf margins and acorns, will be used.

Trees usually acquire their common names by some main characteristic. In the oaks found in Virginia, this is readily noticeable. A good example is the chestnut oak or the willow oak. In some localities many trees have from 10 to 30 local names, which results in much confusion as to just what species of tree is being referred to. Because of this great confusion in common names, the universal system of technical names was devised. With this system the name of a tree is the same throughout the world.

Figure 13—Willow Oak
Linear to lance shaped. Top and bottom surface without hair.

Walnut Trees Also Keynoted In Conservation

Supervisors and members of the Lord Fairfax Soil Conservation District are conducting a drive to promote and motivate the planting of some 15 to 20 thousand improved walnut trees on the farms, camp sites, recreational areas, and odd acreage in that district during October of this year.

This improved variety of the eastern black walnut is known as the Ohio, Stabler and Thomas variety, a hearty species with particular advantages.

The effort on the part of the Lord Fairfax District is an organized program to promote soil conservation through planting of the trees, and a strong keynote of the drive is the benefits to land owners and other property groups.

The district points out that the trees may be planted with a minimum of effort and will in no way reduce or otherwise impair crop acreage of the land if properly planted where soil is deep, fertile and well drained. The walnut is one of the fastest growing hardwood trees, and thus valuable for its excellent timber. Within six to seven years, it will produce a large-kerneled, thin shelled nut as a profitable by-product.

Last year, six thousand of these trees were planted, and the Lord Fairfax Soil Conservation District reports that over 10,000 have been requested for planting this fall. Children from 50 schools and other conservation-minded organizations have participated in promoting increased planting. For further information, write to C. E. Koontz of the Lord Fairfax Soil Conservation District, Winchester, Virginia.

VIRGINIA WILDLIFE

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

COMMISSION MEMBERS ATTEND SOUTHEASTERN ASSOCIATION MEETING. I. T. Quinn, Executive Director of the Commission of Game and Inland Fisheries, reports that the tenth annual meeting of the Southeastern Association of Game and Fish Commissioners, held in Little Rock, Arkansas, on October 7-10, was a great success and that Virginia was well represented.

Commission game biologist Stuart P. Davey took part in the program, presenting a technical paper on the fertility and measurement of deer herds in Virginia, and J. N. Van Alstine, of the U. S. Forest Service supervisor's headquarters in Roanoke, presented a paper dealing with the utilization of pine plantings in hardwood areas as an aid to wildlife.

Law enforcement chief Webb Midyette presided over the meeting's law enforcement session and Robert G. Martin, assistant chief of the fish division, presided over the technical fish session.

TENTH ANNUAL WILDLIFE ESSAY CONTEST UNDERWAY. The Annual Wildlife Essay Contest, set up by the Commission of Game and Inland Fisheries and in which the Virginia Division of the Izaak Walton League of America cooperates, is well underway again for this year.

Prizes totaling $1400 will again be awarded winners, with a $400 college conservation scholarship awaiting the senior grade boy or girl whose essay is judged best. Entry is open to all Virginia school children in grades five through twelve.

The contest is enjoying ever-increasing popularity and participation, and preparations for this year's contest were made well in advance, with entry blanks and essay packets already sent to hundreds of teachers throughout the state. The essay has as its theme this year, "Our Wildlife Resource—Its Value and Wise Use."

BIG GAME TROPHY CONTEST FOR 1956. The State Big Game Trophy Contest, for 1956, sponsored jointly by the Commission of Game and Inland Fisheries and, this year, by the Harrisonburg Chapter of the Izaak Walton League of America, will be held on November 10th at the National Guard Armory in Harrisonburg. Included for the first time will be a contest among Virginia's bow hunters for the best deer killed with a bow and arrow, with a trophy awarded to the winner.

To be eligible for entry in the State Contest, trophies must first have been entered in the appropriate regional contest and judged among the top five within their class. There are two regional contests each year, one for trophies killed west of the Blue Ridge Mountains and one for trophies killed east of the Blue Ridge. The eastern contest is tentatively scheduled to be held on November 3rd at Newport News and is sponsored again this year by the Peninsula Sportsman's Association. The western contest, sponsored by the Harrisonburg Chapter of the Izaak Walton League of America, will be held in Harrisonburg in conjunction with the State Contest. These two clubs alternate each year in joint sponsorship of the State Contest.

WATERFOWL IDENTIFICATION GUIDE IN GREAT DEMAND. The Virginia Waterfowl Identification Guide, recently off the press, has been accepted with much enthusiasm and large numbers have been sent out to schools, sportsmen's organizations, and interested individuals throughout the state.

The 56-page booklet is a well-edited, thorough, and informative one, and should prove invaluable as an aid in ready identification of all waterfowl species found in Virginia and the Atlantic Flyway.

Persimmons ripen in the fall and are abundant in Virginia. They often hang on the tree far into the winter, furnishing food for opossums, raccoons, foxes, turkey and other forms of wildlife.

Last year some 539,875 Virginia hunters took to the fields and woods[illegible] m[illegible]th.

WILDLIFE IS A[illegible]SE
OF THE YEAR
"HARVEST TH[illegible]

In nature under normal conditions our game[illegible]us, t[illegible] young each breeding season. No area can carry [illegible]ate[illegible] support; therefore not all of the young reach ma[illegible]ity. [illegible] natural causes start cutting down this surplus ab[illegible]t im[illegible] the surplus by hunting, fishing and trapping as [illegible]g as [illegible] for next year's crop of wildlife. We harvest our g[illegible]me fr[illegible] wise to harvest our wildlife crop.

Many Virginia sportsmen each year find heal[illegible], good[illegible] mighty fine eating in helping to harvest this surp[illegible]s of [illegible]

Commission [illegible]

We harvest our corn and other grain crops and utilize them to the fullest, saving seed to plant for another year. This is wise use.

Fish indirectly are a product of the land. Fishing not only furnishes healthful recreation but this string of pan fish shows wise gathering of the surplus.

Serious damage can result if we do not keep[illegible] dee[illegible] therefore this year new areas are op[illegible] for [illegible]

to ean the harvest of various game birds and animals native to the Com-
we th.

Oak trees are of major importance to both man and wildlife. Acorns rate at the top of the wildlife food list and are the staff of life for many wildlife species.

SEASONAL CROP
AR SO . . . .
HE SURPLUS"

birds, fish and mammals always produce a surplus of greater game population than food and cover will ri'. Disease, predators, accidents and death from os immediately. It is wise conservation to harvest ng as we regulate the take so as to leave brood stock ai, fruit and other crops of the land. It is just as

n, ood exercise, unsurpassed recreation and some s fish, game birds and game animals.

ot by Kesteloo

Peanuts are threshed and stored for future use. Wildlife, too, must harvest food and many species store it for the winter months.

he eer herd in balance with the food supply;
n the taking of deer of either sex.

Many hunters enjoy the sport of reaping the crop of waterfowl that wing down from their breeding grounds along the various flyways each fall.

A Fowl to Give Thanks For*

By ALAN DEVOE

New York Zoological Photo

With the spread of settlements, the wild turkeys thronged the virgin country from the Atlantic coast to the Dakotas, from Canada to the Gulf of Mexico.

WHEN we sit down to our Thanksgiving dinner, all of us are aware that we are joining ourselves to American history. We think of Captain Miles Standish, of Roger Williams, of Father Marquette kneeling in the wilderness, blessing a campfire feast of wild turkey.

But there is more history in this delicious rite than, I suspect, most of us realize. For, although the turkey was enjoyed by the Pilgrims, it was not discovered by them. More than a century before the landing on Plymouth Rock, Spanish valiants arriving in Mexico found the bird. And they found it domesticated. For untold ages the Aztec Indians had been primitive turkey farmers; Emperor Montezuma featured turkey at his banquets.

The Spaniards took some home with them and by 1530 turkeys were established throughout Spain. Within less than a century they were popular all over Europe. So the hardy travelers on the Mayflower must have been familiar with them at home. Nothing in the settlers' experience had prepared them, however, for the immense size of the wild turkeys they found, nor for their dramatic colors and amazing numbers.

The domesticated Mexican turkeys were smallish birds; in 16th-century Europe they were classified as guinea fowl. The North American wild turkey was — and is — a huge and magnificent bird, our biggest game bird. Its body is almost four feet long, its wingspread five, glinting in coppery iridescence. "He can runne as fast as a Dogge, and flye as well as a Goose," wrote an awed William Wood from Massachusetts about 1630. The mighty gobbler's "beard" of black bristles, hanging from the center of his upper breast, is so long it sometimes sweeps the ground. He has vivid red legs and purple-black claws. When he cuts loose with his challenging gobble it can be heard ringing through the forest a mile or more.

In Pilgrim days wild turkeys thronged the virgin country from the Atlantic Coast to the Dakotas, from Canada to the Gulf. Pioneers found the great birds friendly and unsuspicious. Turkeys gobbled and strutted inquiringly about frontier settlements, sometimes mixed in winter with domestic birds in the pioneers' clearings and came trooping through backwoods hamlets in droves of up to two or three hundred. Thomas Morton, writing in 1632, put it: "The Turkies sally by the doore, they daunce by the doore." Indians told him they frequently saw a thousand a day in the woods. But the Indians had never domesticated them. They merely hunted turkeys occasionally to get feathers for their headdresses.

With the spread of settlements and steady hunting, turkeys lost their trustfulness. Where they had thronged in multitudes, overnight there was "scarce any." And these were "craftie like foxes." They were all but extinct throughout New England by 1812.

The turkeys retreated to the quiet groves, thickets and swamps where they could find unbroken woods peace and recoup their numbers. Today wild turkeys are locally abundant in Oklahoma, Texas, Arkansas, Florida, Virginia, the Carolinas and Louisiana; there are a few in some adjacent states.

What song is to a male songbird, gobbling is to a male turkey. He uses it in mating time to claim a territory. In February or early March the gobbler clucks and whoops defiant land claims until he has staked out a territory of anywhere from 100 to 300 acres. But without fierce con-

* Reprinted by permission of *Audubon Magazine* and *The Reader's Digest*.

With the spread of settlements, the wild turkey has retreated to quiet groves, swamps and unbroken woods. This is typical turkey range in Virginia's mountains.

The turkey is primarily a ground dweller. A flock will feed over a considerable territory and take to flight only when it must.

tests he can rarely establish his claim and bestow his favors on the harem of hens he demands.

The mating season is a time of terrific gobbler fights. And an imperious old gobbler, with his wings spread, neck out, spurred legs flying, is not to be taken lightly. (A fighting turkey cock has been known to drive his spur nearly an inch into an oak board.) The gobbler's particular rage is directed at any upstart yearling toms that may have taken a notion to feel grown up. As a result, a young tom turkey nearly always has to wait until his second season before he can be the male he thinks he is.

Though the gobbler's spirit is one of lordly polygamy, the hen turkeys remain faithful to him. They roam the woods and thickets together, feeding on wild fruits, berries, nuts and insects. The honeymoon lasts until mid-March or April, when it is time to raise the family. Then the imperious gobbler is off. He wants nothing to do with domesticity. Between broods the gobblers ignore their females completely. Even when turkeys are traveling in big flocks, the sexes band together in separate companies. High-stepping gobblers form a proud all-male vanguard, the meek hens trailing behind.

Though meek and domestic, a hen turkey is quietly wise. The nest she makes is a shallow, leaf-lined depression, cunningly hidden in the lee of a log or under a dense bush. Her eight to 15 eggs, pale cream-white, dotted and speckled with reddish browns, sometimes shading to delicate lilac, receive loving and subtle care. She must incubate the eggs alone four weeks; but she sits very close, leaving them only when absolutely necessary, and then she carefully covers them with a concealing layer of dead leaves. Baby turkeys are ready to leave the nest the day they hatch. Their proud mother leads them immediately to high ground, knowing their susceptibility to dampness.

Turkeys have a gift for being, as Audubon said, "wonderfully canny." When they find a rattlesnake, for instance, they promptly form a big circle. Drawing in, tighter, tighter, wing to wing, they take turns darting in, thrusting, pecking, stamping, until their enemy has been dispatched.

When a wise old gobbler has to deal with a marksman waiting for a chance to draw a good bead, he's likely to resort to a beeline trick that's hard to beat. Stepping behind a tree or a boulder, he will suddenly run as hard as he can in an incredibly straight line, keeping the big obstacle all the while in the watcher's line of vision. By the time the enemy has begun to wonder why the turkey is dawdling so long behind that tree or rock, the gobbler is well on his way to the next county.

Turkeys fly only when they must. It's hard for them to get their heavy bodies into a take-off in a hurry. The big birds roost whenever possible in treetops over water or swamps.

Wild turkeys wander over big distances, up and down the Mississippi, through the Ozark country, around swamplands and heavy timber in state forests. The turkey trot isn't just a phrase. The long-legged birds can slog along, mile after mile, day after day, like tireless infantrymen.

State game commissions have put into effect broad conservation programs. Virginia today has an estimated 12,000 wild turkeys, and delighted sportsmen, with good conscience, enjoy a take of about 1600 birds a year. In Pennsylvania the wild turkey has expanded its range from only about two million acres to well over 15 million, and the annual take averages 9,000. The wild turkey hasn't gone, and isn't going.

HUNTERS, PREVENT FOREST FIRES

Hunters, crush your smokes and watch your fires. Remember, only you can prevent forest fires! The forest is the home of many of our game birds and animals. Protect it.

HUNT THE RIDGES FOR YOUR DEER

By JAMES W. ENGLE, JR.
District Game Biologist

Commission Photo by Kesteloo

Stick to the ridge so you can look and listen down into the hollows on either side of the ridge. You can cover twice as much ground as you normally would.

ARE you one of the 60,000 hunters who will be hunting west of the Blue Ridge Mountains for your deer this season? If so, perhaps some tips on deer hunting might be of help to you. We have some areas in which hunters need help to make a bigger harvest during the mad "rat-race" of the one-week season.

My hunting friends in Staunton say, "You spend most of your time in the mountains . . . you should know where the deer are the thickest." Knowing where the deer are is only a small part of getting your deer, however. Most everyone knows where the deer are; it's getting one on the ground and out to your car that is another matter. Looking back on experiences encountered in bagging six deer in the past six seasons, perhaps I can be of some help to other deer hunters.

The most important part of deer hunting is to hunt an area with which you are very familiar. Before the season opens (and this cannot be emphasized too much), take time to study the topography, available deer food, deer trails (and their use), and cover that the deer will be using. And over the years, determine the trails that other hunters will be using so that you can take advantage of their movements and noise. Do not wait until the opening morning to start scouting your prospective deer hunting country. Start looking as soon as the leaves begin to fall. Find where the deer trails run, and why. Are they for cover, food, or just traveling? These trails are as plain as U. S. Route 1, and when two or more good ones join, you can figure that a deer will soon come by that way. At daybreak, you will find the deer on their feeding grounds; by eight or nine o'clock they will start moving to cover to bed down for the day. Around three or four o'clock they begin to move out of this cover to feed. This is their normal cycle and it is, of course, disturbed by hunters. Therefore, during deer season, the cycle will be changed somewhat. Also when a storm is moving into the area, you will find the deer out feeding at most any time.

Also use to your advantage some of the information that has been gleaned from the big game tags. They show that 80% of the week's deer kill is made within the first three days. There is no way to get around it; the first day of the season a hunter has a better chance to get his deer! Each day after that, his chances are less.

As afore mentioned, try to take advantage of the other hunters in the woods. Place yourself at least half a mile away from hunter access trails at daybreak on opening day or any other day. The human is a clumsy animal in the woods and deer will keep moving out ahead of him. It is much easier to let the deer move in on you than it is for you to move in on the deer. Have a lot of patience, spend most of your time looking and listening.

Don't hunt the hollows . . . that is where most of the other hunters will be. A clattering rock in the mouth of a hollow will move all the deer in that drainage over the ridge. Stick to the ridges so you can look and listen down into the hollows on either side of the ridge. In effect, you will be covering twice as much ground as you normally would.

The term "still hunting" means different things to dif-

ferent people. It is done best with one to four hunting companions. When employing this method, each man hunts a ridge adjacent to his hunting companion, and thus is in a position to take advantage of the mistakes his friend might make. Start out before daylight so that each man can get to his favorite deer stand for that all important daylight hour. Stay there until an hour after daylight, or a little longer if you like. And remember that it is best to be high on a ridge where you can take advantage of the other hunters' hustle and bustle during these daylight hours. Pick a spot where short ridges join onto the main mountain. You will find deer working away from the roads in the valleys and going up the ridges to the main ridge into thick cover. After the season has been open a few days, they will not be far from that cover when day breaks.

If you do not "luck" into your deer by an hour or so after daybreak, start moving. Try the same procedure used in squirrel hunting when the leaves are off the trees. Move about 50 to 100 feet, stop, and *listen!* When you are sure nothing is moving, or within hearing distance, move on another 50 to 100 feet, then stop and listen again. Investigate every noise. A deer pawing for acorns makes little noise; and a deer sneaking off through the brush makes no more noise than a squirrel. All animals make a certain pattern of noise when they walk . . . deer sound one way, squirrels another, fox another, turkeys still another. If you learn these patterns, you can often identify your animal by the noise it makes. This will help you to decide whether you should continue to stalk the noise or make a break to get in a vantage position so that you can shoot. A deer has to make some noise if he is walking on leaves. Of course, when he walks a trail, he is almost completely silent, but even then he will sometimes disturb a rock and give himself away. It is hard to know which is more important in still hunting, your eyes or your ears. Your ears will really reach out beyond your eyes in the timber ridges. A good dry day is ideal for still hunting, or a day when the leaves are so frozen that you can hear every telltale crunch. Make little noise yourself, as the big mule-like ears of a deer scoop in the noise and he will locate you in a second.

Deer trails give you a good path to walk the ridges. You will find that, for the most part, they follow a good grade and are easy walking. Then too, if you walk a deer trail you can get away with making a little noise; a deer might think you are another deer. But so might another hunter, so be sure to wear your red!

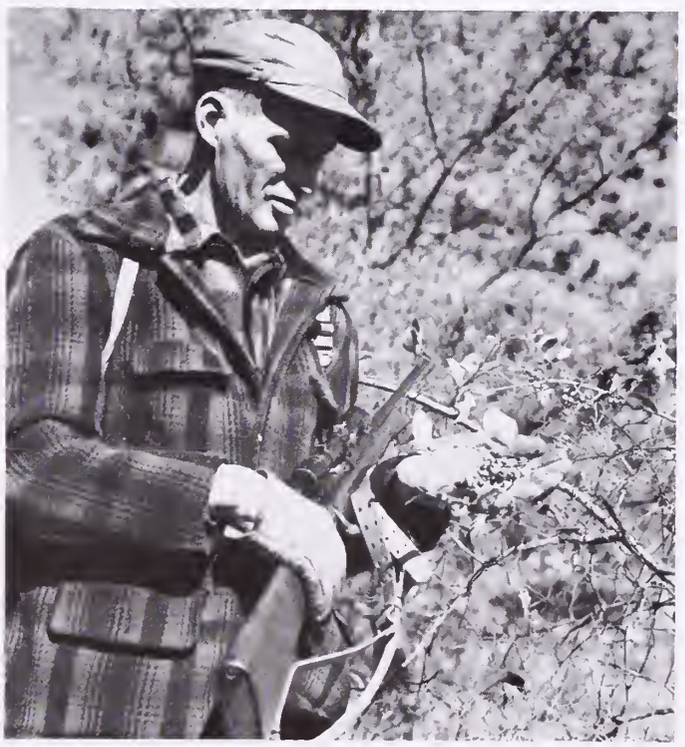
Try the "walking and stopping" until about midday, then pick out a good overlook on which to park yourself and eat lunch. After about an hour or so for lunch, start working your way along the trail again. Around three o'clock, try to be at a place which affords an overlook of a good feeding ground. Look to see if leaves have been turned over where the deer may have been pawing for acorns. This will indicate that they have been feeding in the area. Notice the droppings . . . are there a lot of them and are they fresh? If the answers are yes, it is also a good sign that the area has been recently used. Most animals are creatures of habit; once you learn their habits, it is not hard to intercept them.

In working along your ridge, look first over one side and then the other. If you are lucky you will find a deer bedded down on the hillside. He will be so located that he can command a view of the area below him and have access to two or more escape routes, should anyone come along. And if this deer should see you, he will doubtless be out of sight in one quick flash of his white tail!

Our sex ratios on deer are about one buck for every seven does, so again you can figure your averages to help you find a deer. If you see a large band of deer on the move, a buck won't be very far away. If the herd has been disturbed, you will generally find the does and fawns moving in front. The buck will be behind or out to one side. Give your herd a quick once-over and then start looking for one with antlers and running by himself. If he is a good buck, there won't be any question in your mind when you see him, because the first thing you will see will be the antlers coming through the woods. A good pair of light weight binoculars will be a big help to you here.

As for guns and equipment, books have been written on the subject and still there is no agreement. Clothing and shoes should be as light as will keep you warm. Heavy, clumsy boots make too much noise. Of course if the temperature is down to zero or snow is on the ground, you have to wear what is necessary. Personally, I like to carry my lunch spread around in different pockets. If you are hunting the high country, water is going to be scarce, so take along a canteen. A sling on your rifle is a must, so that you can have your hands free in going up or down steep grades. It will also give you a free hand for dragging out your deer. Be sure to

(Continued on page 23)



It is important to recognize deer food and the browse signs that tell if deer are feeding in a given area.

Commission Photo by Kesteloo

Tabby is a predator and a highly skilled one, but how many game birds or animals are actually taken by hunting cats?

The Case for the Cat

By R. J. SPIKER
Editorial Assistant

WHENEVER and wherever hunters assemble to share their one common love, you may be sure that, after awhile, a sudden and inevitable chill in the room will announce a conversation topic that all true sportsmen argue with an eager and abiding hatred. And it will follow, just as inevitably, that Tabby-the-cat will then and there be crucified by all present.

Perhaps no other animal in existence today has been so maligned as has the cat, particularly by the hunting set, which readily contributes assorted oaths vindictives, and promises of extinction. For the hunter has convinced himself, through observation, digestion of numerous articles, authorities of the "it is said" school, and word-of-mouth incriminations, that the common house cat is one of this country's top predators of small game.

A number of years ago, an article in a leading outdoor magazine labeled Tabby the "nation's number one predator" and waxed warmly to a character assassination that went far beyond the cat's disposition in wood and field. Yet, in this exposé, there was a conspicuous lack of supporting evidence.

So may it be submitted here before progressing further that such information, although impressively endorsed and enjoying a large and enthusiastic audience, is seldom authoritative beyond opinion and scarcely ever substantiated by research or statistics. Careful investigation (indeed, investigation at all) would tend to prove that the bulk of Tabby's wildlife larder consists primarily of rodents and assorted birds. And not game birds. Although a few rabbits and a quail or grouse are sometimes indiscriminately included, the percentage of such is so relatively small that it is of no consequence.

It would be foolish to deny that the cat does prey on wildlife during many of its waking hours. For Tabby is a professional hunter of long standing and, as such, follows his profession with a zealous show of dedication. Furthermore, he is well equipped for the job. Nature did not endow him with razor-sharp claws, powerful teeth and jaws, and a lithe body of amazing grace and agility for the express purpose of romping with granny's ball of yarn or lapping milk from an initialed bowl. So, just to keep the facts straight (and we are primarily concerned with facts here), Tabby *is* a predator and a highly skilled one. No other living creature, including jungle relations, can match his ability, cunning or success on the hunt. He hunts because it is his nature to do so, a natural and hereditary instinct handed down through generations; he hunts to sustain his diet, for his taste is not naturally domestic; and he hunts very often for the pure enjoyment afforded him and the pleasure of the kill. The latter is one of Tabby's more unfortunate characteristics, for he possesses an inherent disposition to cruelty which leads him to incredibly malicious sport at the expense of the life, limb and property of captive quarry. It is hardly a pleasant exhibition and justifies the dislike it earns in human spectators.

But as to this charge of his being the nation's number one predator of small game; as to the alarming number of game animals that he supposedly cheats the huntsman out of, perhaps it can be proven that this must remain gross exaggeration in many instances and merely prejudiced gossip in others.

Here is what would certainly appear to be ample proof of this, in the form of some excerpts from an article in the *Michigan Conservationist*, by staff writer G. W. Bradt, who distinguishes himself in defense of Tabby. He says:

"Paul L. Errington (notes on Food Habits of Wisconsin Cats, Journal of Mammology, vol. 17, pp. 64-65), reports as follows: 'Fifty stomachs collected from October 15, 1929 to January 1932 showed the following items eaten: Cottontail 3; Norway rat 7; Miacrotus (meadow mice) 26; Peromyscus (deer mouse) 8; Mus (house mouse) 2; un-

identified mice 9; short-tailed shrew 1; unidentified small birds 3.'

"Frank B. McMurry and Charles Sperry (Food of Feral House Cats in Oklahoma, Journal of Mammology, vol. 22, pp. 185-190) report on 107 cat stomachs examined over a 3-year period. Eighty-four of these stomachs contained food, and the following percentages are based on these stomachs.

" 'Breakdown of stomach contents showed food eaten as follows: insects 12.5 percent; mammals, chiefly rodents, 55 percent; garbage 26.5 percent: birds 4 percent; reptiles 2 percent. Birds were found in 9 stomachs, but included no game birds. Cotton rats, considered an injurious species, comprised about half of the rodents eaten. the remaining half being about evenly divided between other types of small rodents and cottontail rabbits. Limited as these figures are, they are actual figures, as against the casual observations and arbitrary opinions usually cited.' "

Bradt continues: "One of a litter of kittens at our residence on the station area showed a tendency to bring his prey into the house, apparently as a 'showing off characteristic.' We were amused at first, and then interested to see what he would catch. His record for eighteen months ending May 28, 1949 is as follows: 1,600 mice, approximately 1,200 of which have been meadow mice, the rest divided between house mice, deer mice, and jumping mice; 3 spermophiles (gophers); 6 barn rats; 4 young rabbits; 15 shrews; 54 English sparrows; 1 flicker; 1 meadow lark; 1 robin; 2 goldfinches; 2 chipping sparrows; 1 white-throated sparrow."

"While the record of this cat may not be characteristic of cats in general, it is a positive statistical record and, when considered with the few authentic good records available, does cast a doubt upon the traditional idea that cats are vicious predators on songbirds and game."

As Mr. Bradt says, while the above statistics may not necessarily apply to all cats in all parts of the country, they nevertheless do say something of value in the cat's behalf. And they are at least statistics. Seldom, if ever, has a similar record been presented for consideration in articles that would seek to prove that Tabby preys almost exclusively on game animals.

Close examination of the booty Tabby returns from his forest forages will more than likely prove consistent with the booty of cats like Mr. Bradt's. And should one rabbit be deposited on the doorstep, please remember that perhaps 10 to 100 times that many rats and mice have been accordingly destroyed. Certainly, there is general agreement that rats and mice are of no particular value, economicwise, conservationwise, or otherwise, except as an important item in the food chain of larger carnivores and birds of prey.

Therein, the case for Tabby. You may not like him; that is understandable. You may accuse him of many evils, ranging from that of harbinger of bad luck to discordant back-fence baritone. You may cite his guilt in the wanton slaughter of thousands of songbirds. But you hunters and sportsmen are being unfair when you hang the blame on Tabby for a poor season of rabbits, squirrels or quail. Facts would seem to clear him of that particular offense.

With Dove Shooting Underway
JUDGING DISTANCE SAVES CRIPPLES

By HENRY P. DAVIS*

AN intimate knowledge of distances in relation to effective shotgun ranges is one of the most important factors in successful wing shooting.

A huge amount of sporting ammunition is wasted every season because many shooters have never taken the trouble to learn to judge various distances. They think a game bird is within shooting range as long as they can identify it as such, and blast away until their guns are empty. This is particularly true in duck hunting and thousands of what would have been excellent chances are tossed away simply because the hunter is so impatient and excited that he cannot wait. Or else he doesn't know any better. These fellows are "spoil-sports" for the other fellow, for they not only shoot at impossible ranges, but, in doing so, ruin the chances of more experienced and efficient hunters who know enough to hold their fire until the game is well within range.

Many of the misses that disappoint these fellows could well have been killing hits if these chaps hadn't tried to strain their guns. It is quite likely that they pointed properly and that their leads were correct, but the range was too great for the loads they were shooting. A large percentage of the cripples which occur each season is due not to the fact that they were struck with the edge of the shot pattern or a so-called stray shot or two, but because the shot which struck them had traveled so far that the shocking and penetrating powers necessary for a clean kill had been lost.

One of the greatest contributions we can make to the future of hunting is to become proficient in judging distances, particularly those within the killing range of a shotgun and thus eliminate a sizable percentage of the annual loss from cripples. This particularly applies to game birds flying overhead and over open water. Once we have established firmly in our own "mind's eye" how large various game birds appear at various distances, our trigger fingers will act instinctively at the proper time. This year try to put a little more thought in your shooting and help reduce the number of cripples.

* Public relations manager, Remington Arms Co., Inc.

What is Happening to Wild Turkey Hunting in Virginia?

By JACK V. GWYNN
Game Biologist

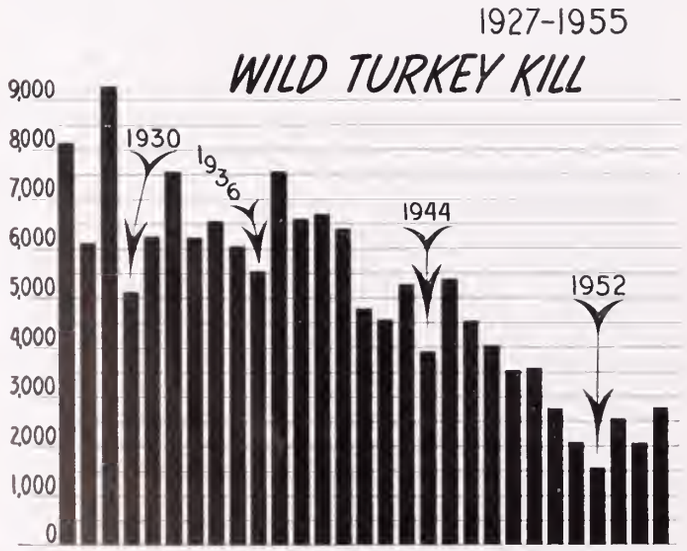
This question may well be worth more than $64,000 to the sportsmen of Virginia, providing of course, that correct answers can be given. And in order to obtain the correct answers, the Virginia Commission of Game and Inland Fisheries officially set into motion last July a new series of investigations designed to find out more about the requirements of this largest and highly prized upland game bird and to establish a scientific basis for recommended management practices throughout the state.

Several such investigations are even now underway. They are:

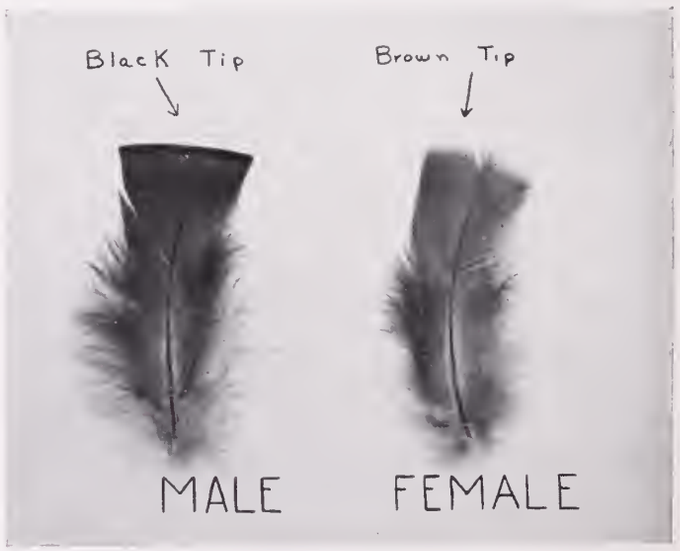
1) A range study which will be conducted to determine the amount of suitable range utilized by the turkey and available to it at the present time. An evaluation will be made to determine the degree of suitability of different turkey ranges. The knowledge of whether these ranges are more or less suitable will also be sought. Aerial photographs will be used as an aid in this study since their use in conjunction with recently developed photo interpretation techniques will allow more accurate gathering of information in less time than was heretofore possible. It will be of primary importance to be able to determine the factors necessary to keep a wild turkey flock healthy, happy and productive.

2) An analysis will be made of the wild turkey restocking program. Some of the areas which have been stocked will be censused from time to time so that knowledge of the factors involved in game farm releases will be gained. Techniques developed by other states will be studied in an effort to increase the success of such stocking to be carried out in the future. Live trapped wild turkeys will be stocked in increased numbers as a continuation of the effort by the Commission to establish huntable gangs in the southwest portion of the state.

3) A census of wild turkey numbers much like an inventory in business is necessary to determine more precisely the position in which we now stand. It supplies an indication of future procedure and allows us to measure the effects of the policies being followed. To census the turkey population statewide is no small task and even though it has been done in the past, it seems at present more practical to census only certain counties located strategically throughout the state. Approximately four counties in each of the physiographic provinces (Tide-



This graph shows the trend of the annual known kill of wild turkeys in Virginia for the past several years.



A feather taken from the breast of a gobbler will have a black-fringed tip. One taken from the breast of a hen will be fringed in brown.

water, Piedmont, etc.) will be studied as intensively as possible for census data and other pertinent information. It is believed that these "sample" counties will be representative of the conditions prevalent throughout their respective areas.

In addition to the census, there are several other factors indicative of an increasing, decreasing or stable turkey population. These are: (a) the annual clutch size (average number of eggs per nest); (b) the nesting success (number of eggs which have been successfully hatched); (c) the monthly brood size (especially the size of September's brood since this indicates the rearing success of the female); (d) the sex and age ratios from the hunter's bag.

4) The fourth phase of the investigations will be concerned with disease and parasites, a subject which has always been rather difficult to pin down. It is becoming increasingly important to resolve the true nature of the relationships between turkey diseases and diseases of other wild or domestic animals. Diagnostic centers for this study of diseased, dead and otherwise abnormal turkeys will be located at Harrisonburg and Blacksburg.

5) The fifth and final phase will concentrate upon the harvesting of the wild turkey by hunters. It is of prime importance to find out (a) the number of turkeys killed in different types of ranges, (b) the number of turkeys which survive hunting in different types of ranges, and (c) the ability of existing regulations to control the turkey population in the best interests of both the turkey and man.

This, then, is what we hope to find out in the months that lie ahead. We should not forget, however, that we do not have to start from scratch, as there have been game technicians, game wardens, wildlife students and interested turkey hunters who have kept faithful records pertaining to the wild turkey's plight in this state.

The annual kill figures are among those records which have been kept the longest. They have been graphed on page 22 to show more clearly the trends which have developed. Prior to the 1951-52 hunting season, the annual kill was estimated by the wardens of each county; since then, such figures have been determined by totaling the number of turkeys checked at the checking stations (as required by law).

Although the estimates made by the wardens may not coincide too closely with the numbers killed, it is hoped that they are accurate enough to show what has happened to the hunting kill over the past thirty years. As indicated by the graph, there has been a decrease in the number of turkeys killed by Virginia sportsmen since the record was first taken in 1927. Note that this decrease seems to become steeper around 1941 and continues until 1952, after which a small increase is evidenced.

Fortunately a decrease in kill may not always mean a decrease in the population, since weather, food conditions and the total number of hunters also influence the number of turkey killed. Comparing census figures of 1937 with more recent figures of 1952 and 1953, we find that the turkey population has increased in some counties and decreased in others; many more counties have shown loss than have shown increase, however.

In summary let us state simply that it is important that up-to-date information is acquired. Some of this information (a very significant part of it) will be taken from the hunting kill this fall. To help us obtain accurate information each hunter should be able to correctly determine the sex and age of his kill. The figure on page 22 is designed to help you, in case you do not already know the differences. The accuracy of our final figures depends upon the accuracy of the hunter and checking station operators.

Here's hoping you have a good hunt. See you at the checking station.

HUNT THE RIDGES (Continued from page 19)

take along a piece of sash cord about six to ten feet long. This will be handy to use in dressing out your kill, or to tie it to a pole for carrying out. For this latter problem, it is preferable to tie the rope around the antlers, tieing a stick on the other end, particularly when snow is on the ground. The weight of a deer tied on a pole soon bites into your shoulder.

If you are hunting an area with a couple of your friends, each of you should have a whistle. After you kill your deer and need help to get him out, you will then have a signal device that will not stampede the rest of the deer over into the next state, as a human voice will certainly do. Also, a whistle can be heard further away.

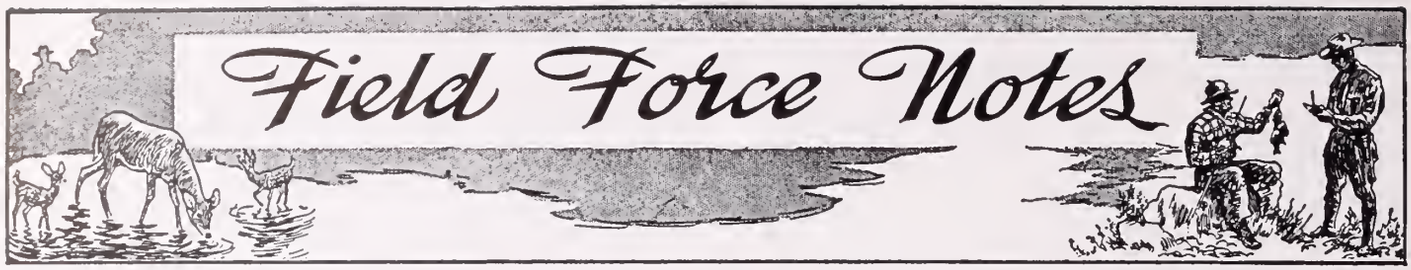
With the 1956 hunting season coming up soon, we are looking for a larger deer kill then ever before. The deer herd can stand it, so get out in the timber and join in the fun.

But once again, do not load yourself down too heavily, travel light, take a good lunch and a rifle that you know how to shoot, and try to become a "ridge runner." These tips have been paying off for many hunters for a number of years!

A Partial Answer Is Conservation

As men try to make a living in any geographic area, the quantity and quality of natural resources there tend to decline. This presents a problem that men have met in one or more of many ways. The solutions include migrating, shifting to less productive resource use, accepting a lower level of living, receiving aids from more favored areas, exchanging goods and services for natural resources of other areas, limiting the population, improving techniques of utilization and maintaining the quantity and quality of natural resources. Although men will continue to use each of these adjustments, clearly some are more desirable and practical than others.

American Resources, Whitaker and Ackerman



Shomon Honored With Testimonial Dinner

J. J. Shomon, editor of VIRGINIA WILDLIFE magazine and chief of the Game Commission's education division, was recently honored with a testimonial dinner by the Richmond Chapter of the Izaak Walton League of America.

The dinner was given Mr. Shomon shortly before he took a ten and a half month educational leave from his duties to complete his doctorate in conservation at the University of Michigan.

A number of Waltonians and Mr. Shomon's close friends attended the dinner, held at the William Byrd Hotel.

J. J. Shomon expresses his appreciation to Waltonians and friends at a testimonial dinner given in his honor.

Wildlife Exhibit at State Fair Draws Good Crowd

The Game Commission was pleased to note that its exhibit at the Atlantic Rural Exposition was well received again this year by the thousands who visited it during the week of the fair, from October 21 through the 29th.

With headquarters in the new, permanent aluminum Commonwealth building, the exhibit again keynoted nature itself, employing a rustic setting that included a replica waterfall spilling into a refrigerated bass pool stocked with largemouth bass and blue gill sunfish.

Of particular interest to the crowds which gathered around the booth were the animals displayed there, and two black bear cubs and two small fawns stole the show as far as the children were concerned. Other outdoor folk included two red foxes, two raccoons, two sleepy groundhogs, a covey of quail, and an albino squirrel. The latter was also viewed with a good bit of curiosity and interest by the public, as many persons were unaware that "white" squirrels existed.

Conservation officers, game wardens, and Commission staff members were on hand at all times to answer questions, distribute free literature, and explain the Commission's program in the state.

Warden Bellamy Expresses Appreciation

Chesterfield County game warden Joe Bellamy is wearing a new wrist watch now which he is a good bit more fond of than the one he lost recently.

The watch was a gift of Bellamy's fellow wardens and other Game Commission members attending the field force school at Blacksburg, who presented it in token of his recent and unfortunate accident.

Bellamy was severely beaten by three Negro men this summer, whom he had apprehended fishing in the James River without fishing licenses. They left the 31-year-old warden unconscious and took his wrist watch with them when they fled.

Bellamy stopped by the Commission offices in Richmond recently and stated that he wanted to express his appreciation for the gift and for the concern expressed over his accident.

"I want to thank everyone," he said, "from Mr. Quinn right on down the line. I couldn't possibly get around to see them all, and I thought this might be the best way to say it."

Commission Again Host To Motherless Squirrels

The Richmond offices of the education division of the Commission of Game and Inland Fisheries conscientiously continues its role as unofficial foundling home for orphaned forest folk.

Sometime in October, Richmond city game warden Julian Hill brought in five hungry baby squirrels. Only five or six weeks old, the infants were unable to feed themselves, and a variety of methods were employed by Commission members. Special services officer Joe Coggin is pictured administering warm milk to one of the brood with an eye dropper.

Joe Coggin feeding one of five hungry baby gray squirrels whose mother was killed by an automobile.

George Washington National Forest Pays Off

Eleven northwestern counties in Virginia will soon divide $67,496 as their share of the revenue brought in by the George Washington National Forest in 1956, reports forest supervisor A. H. Anderson.

This distribution, provided for under federal laws, represents twenty-five percent of the total income derived from the sale of timber and other resources of these federally-owned lands.

Vaughn Monroe Meets Smokey The Bear

Vaughn Monroe, RCA recording star, has joined forces with Smokey the bear in promoting the 1957 Cooperative Forest Fire Prevention Program.

The popular singer is pictured after a formal introduction to the prominent forest fire preventin' bear at a recent Advertising Council public service exhibit of the National Association of Radio and Television Broadcasters convention in Chicago. Monroe, an ardent sportsman, has proffered his talent and services to state foresters and the U. S. Forest Service on behalf of their nationwide drive to prevent man-caused forest fires, and will appear in television trailers and on radio broadcasts released as part of the program.

Popular singer Vaughn Monroe meets the U. S. Forest Service's Smokey the bear to launch the 1957 fire prevention campaign.

Park Service Warns of Dwindling Public Seashores

The seashore, one of our nation's great recreation resources, is rapidly vanishing from public use, reports Conrad L. Wirth, director of the National Park Service.

In a recreation area survey of Atlantic and Gulf Coast properties from Maine to Texas, Wirth shows that of the 3,700 miles of this general coastline, only 240 miles belong to federal or state governments for public recreational purposes. The major remaining areas are confined to 54 undeveloped sectors comprising 640 miles of beachfront. The report recommends that prompt action be taken by the governments to acquire at least half of this.

The reason for the alarming rate by which undeveloped seashore property has been dwindling lies in the pressure of a booming market for beachfront holdings. The number of persons seeking to acquire such property is skyrocketing, along with prices.

The report lists three unspoiled areas of special significance which should be preserved for public recreation and cultural enjoyment. They include Cumberland Island in Georgia, the undeveloped area of Fire Island in New York, and the Cape Cod beach area in Massachusetts.

It is all too evident that unless the warning sounded by the Park Service is heeded, the public will be deprived of one of its most priceless facilities for recreation and, like our vanishing forests, a last frontier of natural beauty. Too, those areas not delegated to public usage could serve in furthering conservation, another vital need.

Buckingham Sportsmen Set Example

Farm game would not suffer loss of their food and cover as a result of "clean" farming if more habitat improvement programs like those of the Buckingham Shooting Association and the Buckingham Game Conservation Club were put into effect.

Recently, the shooting association inaugurated a planting of Wood's mixture along a power-line right of way in the vicinity of Buckingham Court House. The Wood's mixture, combined with serecia lespedeza and bi-color, was planted in less than a day in a strip approximately ten miles in length along the edge of the power line. The strip was planted only where adjacent woods or brush offered good cover for game.

A tractor equipped with a lift-type disc, a drill with alternate spouts blocked, and a grass sowing attachment enabled the club to cover that much area in that short a time. The use of two discs would greatly speed the operation. This would allow a continuous seeding operation and eliminate the doubling back of a single seven-foot disc to accommodate an eleven-foot drill.

Despite severe dry seasons that have plagued Buckingham County of late, the shooting association expects benefits from its efforts in the form of increased farm game in that area.

An example of a good conservation project carried out by two sportsmen's clubs in Buckingham County.

Three years ago, the Buckingham Game Conservation Club planted a quarter of a mile adjacent to a pipe line in the same vicinity with a mixture of bi-color seedlings, serecia lespedeza, and grasses. The club has noted that three coveys of quail are now using that particular area whereas before there was no evidence of quail activity.

Wildlife Questions and Answers

Ques.: **What is the most popular game animal found in the United States?**

Ans.: The common cottontail rabbit is considered the most hunted species in this country.

Ques.: **I have a young bird dog which is developing exceptionally well as a hunter. Recently, however, he brought home a neighbor's chicken. Is there any way of breaking the dog of killing and retrieving chickens without spoiling his hunting abilities?**

Ans.: The most popular method used in breaking a dog of this habit involves a dead chicken. Using wire, fasten a dead chicken to the dog's collar so that he cannot get rid of it no matter how hard he tries. The added weight and bother caused by the chicken often teaches the dog a lesson. If the dog repeats the killing process, again attach a dead chicken. *Do not whip* your dog. This may break him as a retriever on game birds.

Ques.: **Could you possibly give me some idea as to the size shot used on various game animals and birds?**

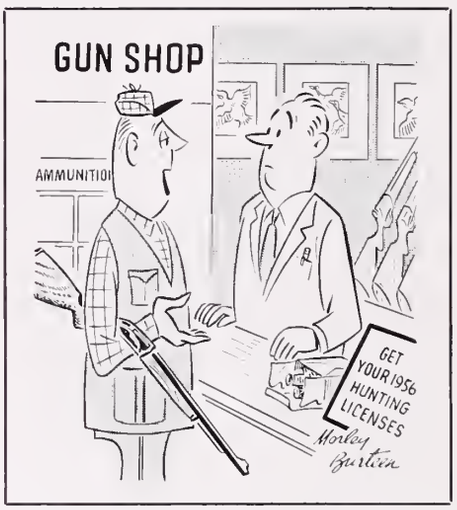
Ans.: There is a great deal of controversy on this question since most hunters have a preferred size shot for each species. Most of them, however, will agree on the following shot sizes: for woodcock, dove, snipe, quail and birds of similar size use 7½'s, 8's, or 9's; grouse, rabbit, duck and pheasant, 5's, 6's and 7½'s; pass shooting ducks and coot, 4's and 5's; squirrels, 4's, 5's or 6's; geese, foxes or turkeys, BB's, 2's or 4's.

Ques.: **What is the best procedure for treating a blister on the foot?**

Ans.: Take a sterilized needle and prick the blister as near the edge as possible. The liquid should then be squeezed out by pressing the blister with a sterilized pad. If the hike is over, bandage the area and let the wound heal. If more walking is anticipated, place a strip of adhesive tape directly over the blister. This will prevent further rubbing of the area. The adhesive tape should not be removed for several days. This allows the skin to heal beneath the blister. A roll of adhesive tape occupies very little space in the hunting coat and often is worth its weight in gold. Carry a roll the next time you go afield.

Ques.: **How can hunting clothes be waterproofed for use in foul weather?**

Ans.: For wool clothing, dissolve one ounce of lanolin in one quart of white gasoline. Dip your garments in this solution and hang them out to dry. Turn them upside down occasionally to prevent all of the solution from running to the lower part of the garment. For cotton articles, dissolve one ounce of beeswax in one quart of white gasoline. Brush this solution lightly on the material. There are also some commercial water repellents on the market. Ask your local sporting goods dealer about these products.



"I want some shells like I had last year. You know, the kind that kill a buck at 600 yards."

Ques: **Could you please tell me the origin of the shotgun gauge?**

Ans.: The gauge of a shotgun, or bore size in early days referred to the number of identical-sized lead balls for which the barrel was made. If twelve lead balls of identical size weighed one pound, they were 12 gauge. This holds true for the 16 and 20 gauge guns, also. The .410, however, is an exception. This is an example of modern calibration and means .410 inches in diameter.

Ques.: **Do you know of anyone who has offered a bounty to fishermen for the catching of predator species?**

Ans.: Yes. The Department of Fisheries of Canada offers a bounty to fishermen for catches of dogfish, a small member of the shark family. The department pays $10 per ton for whole dogfish when they are delivered to a reduction plant. Here the fish are converted to fish meal.

Ques.: **I have a great deal of trouble judging distance while duck hunting. Can you recommend anything that may be of value to me on future duck shoots?**

Ans.: Don't let your distance judging bother you too much. It is a problem experienced by most hunters, especially during their first years as wing shooters. A rule of thumb procedure that often pays off is not to shoot until the colors can be *clearly* seen. This technique allows the duck to approach to within 30 to 35 yards of the hunter. When pass shooting, it is better to overlead a bird than to shoot behind it. As the shot leaves the barrel it tends to spread out in a long string. Depending upon the distance to the target, this shot string may be from one to several feet in length. If you should overlead your duck at long range, it is possible that the bird will fly into the shot string and become a part of the daily bag.

Ques.: **When I clean ducks I have feathers and down all over the house. Is there any method to make this chore easier?**

Ans.: One of the most widely used methods in picking ducks is that of melting paraffin in boiling water. Two blocks of paraffin in a bucket of water is sufficient to handle your day's limit. Remove the boiling water from the stove, dip the duck for approximately one minute and then remove. The paraffin adheres to the feathers and binds them together. This greatly reduces the number of stray feathers scattered during the plucking process.

Ques.: **What is the best procedure for transporting a deer carcass?**

Ans.: Many hunters make the mistake of tying their deer on the front fender of an automobile. This certainly presents an exciting picture to friends and neighbors but it *is not* the best way to care for your deer. The carcass should be cooled as soon as possible after the kill and placed somewhere away from the heat of the motor. Wrap it in a piece of canvas and tie it on top of your car.

Ques.: **Is there a sexual difference in oysters?**

Ans.: Definitely. The sex in an oyster is unstable, however, because changes of sex frequently occur. The American oyster, *Ostrea virginica*, when less than one year of age is predominantly male. After the first year, the sexes occur in approximately a 50:50 ratio. It is interesting to know that oysters are very prolific. The female may discharge up to 100 million eggs at one shedding.

The beginning of a typical show-me trip with a group of some 40 scouts, their leaders and Game Commission personnel.

Some aspects of water conservation and its importance to all living things are explained on the field trip.

Pilot Conservation Program for Scouts Proves Successful

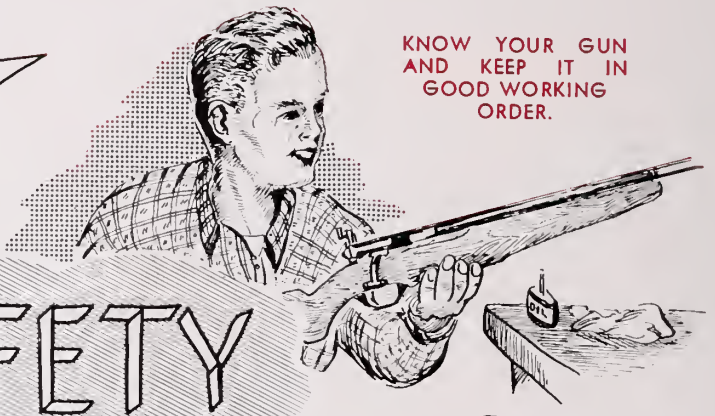
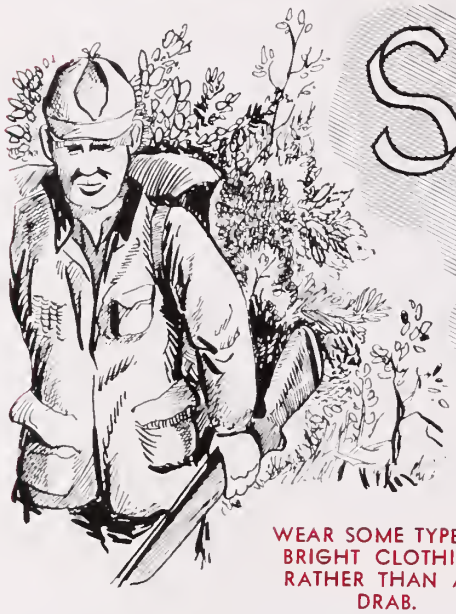
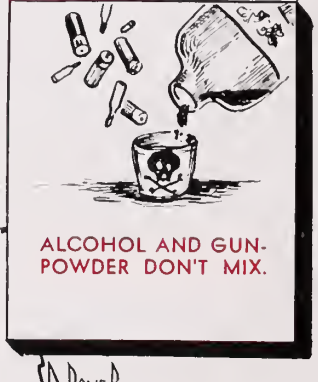
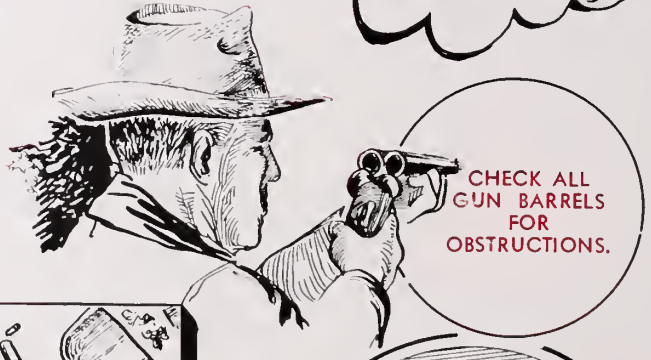
The pilot conservation program tested last summer at Camp Shawondasee, the largest of the Robert E. Lee Council's seven camps, was popular and proved very successful in bringing conservation education into the lives of some 640 Richmond area scouts and their leaders.

Each week for eight weeks members of the Commission's staff spent one day a week at camp, conducting special conservation "show me" trips, training camp leaders, giving talks, demonstrations and presenting moving pictures on the various phases of conservation.

This program was a step forward in an already close-working relationship of the Commission and the Boy Scouts of America. Plans call for an expansion of this type program for other boy scout camps in Virginia.

A question and answer session on law enforcement, underway at the half-way point of the trip, is presided over by a member of the law enforcement staff.

These two scouts show no fear of a toad and salamander collected for the Camp Shawondasee nature lodge.

The night sessions included a talk and movie presented by an education division member to the 200 campers and staff as a finale to a full day of conservation training.

SAFETY AFIELD